

SCIENCE & EDUCATION Impact

Benefits from USDA/Land-Grant Partnership

Animal Health Equals Producer Wealth

Disease prevention reduces costs.

To bolster profits, livestock producers are learning from Land-Grant scientists how to prevent disease, refine diets and improve management of their operations. Companion animals also give us psychological, emotional and physical comfort. So Land-Grant researchers are finding new ways to keep cats and dogs healthy, too.

Payoff

- **Our best friends.** Compounds that control fleas, heartworms and intestinal parasites in companion animals have been developed by **Auburn** scientists. New vaccines are expected to be on the market in the next five years. **Illinois** scientists have established the optimal sources and levels of dietary fiber for cats and dogs.
- **Bye-bye brucellosis.** Brucellosis, a serious reproductive disease, threatens beef cattle and dairy cows. By coordinating vaccinations, **Arkansas** Extension agents have cut the number of brucellosis-infected herds in the state from 691 in 1984 to zero in 1997.
- **Proactive porcine plans.** In 1991 **South Dakota** scientists discovered a new viral disease they named porcine reproductive and respiratory syndrome. In 1994, a control vaccine was released commercially. Veterinarians estimate that 30 percent of U.S. swine herds are infected with the disease and may have been lost if the disease had gone undiagnosed and uncontrolled. **Purdue** researchers found that vaccinating sows against *Mycoplasma hyopneumoniae*, a respiratory disease, before farrowing helps prevent transfer of the disease from the sows to piglets. The vaccine, which costs 10 cents per pig, improves the immunity of both sow and piglet, saving \$5 to \$10 per pig. **Penn State** specialists working to eliminate swine pseudorabies have been able to reduce the number of quarantines in the state from 39 to two between January 1997 and January 1999. The remaining two quarantines are expected to be removed by spring 1999.

RESEARCH,
EXTENSION AND
EDUCATION
AT WORK

SCIENCE & EDUCATION Impact

Benefits from USDA/Land-Grant Partnership

- **Doggone disease.** Spontaneous abortion of calves costs the **California** dairy industry as much as \$35 million in lost calves and reduced milk production. **UC Davis** veterinarians have identified *Neospora caninum* as a major cause of spontaneous abortion of dairy calves. **Wyoming** scientists found dogs are the host of *N. caninum*. Preventing contamination of livestock feed with cyst-laden dog feces could be a cheap and effective solution.
- **Milking research.** Ketosis is a metabolic disorder that can cut a dairy cow's milk production in half, costing U.S. dairy farmers \$150 million to \$300 million each year. Curing a condition called fatty liver would prevent most cases of ketosis. **Iowa State** animal scientists have shown they can correct the fat imbalance in the liver and clear up fatty liver by treating cows with a natural hormone called glucagon. Dairy managers who attended **Maine** workshops were able to decrease reproductive losses by an average of \$654. Performance in herds managed by people who didn't attend the workshops deteriorated slightly.
- **Buzz off!** A horn fly will bite a cow about 20 times a day to draw blood, costing beef producers more than \$4 million a year. Pyrethroid ear tags controlled the pests until the flies developed resistance. **Georgia** entomologists have found that chlorfenapyr kills pyrethroid-resistant flies at one-fifth the dose that it takes to kill nonresistant flies. The enzymes that protect horn flies against pyrethroids activate chlorfenapyr to its toxic form. The chlorfenapyr ear tags are expected to become available in 1999.
- **Beefing up production.** Using a record-keeping system and management program for smaller midwestern beef operations reduced **Illinois** producers' annual feed costs from \$307 to \$263 per head. **North Carolina State** Extension specialists have issued "preconditioning" recommendations for weaning, feeding, vaccination, parasite control and management of feeder calves. Preconditioned calves sell for \$4 to \$6 per hundred weight more than similar calves that have not been preconditioned. This increased price per calf plus additional weight gain translates to up to \$50 more per head. **Texas A&M** feed strategies have boosted weight gain and reproduction in beef cattle raised in subtropical East Texas. These gains allow East Texans to produce 130,000 to 260,000 additional weaned calves, which raises gross revenues by \$65 million to \$130 million annually.
- **Pet detectives.** Tests developed by **UC Davis** veterinarians to detect feline leukemia and immunodeficiency viruses in cats generate about \$40 million a year for veterinary companies and up to \$80 million annually for veterinarians. They also developed the first diagnostic test for parvovirus, which can be fatal to puppies. Early detection can save the life of a dog, and the test generates about \$13 million in sales annually for veterinarians.



**Cooperative State Research, Education,
and Extension Service**
United States Department of Agriculture

Cooperative State Research, Education, and Extension Service in cooperation with the Extension Committee on Organization and Policy, the Experiment Station Committee on Organization and Policy, the Academic Programs Committee on Organization and Policy, the International Programs Committee on Organization and Policy, and the Louisiana State University Agricultural Center.

United States Department of Agriculture prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.)